

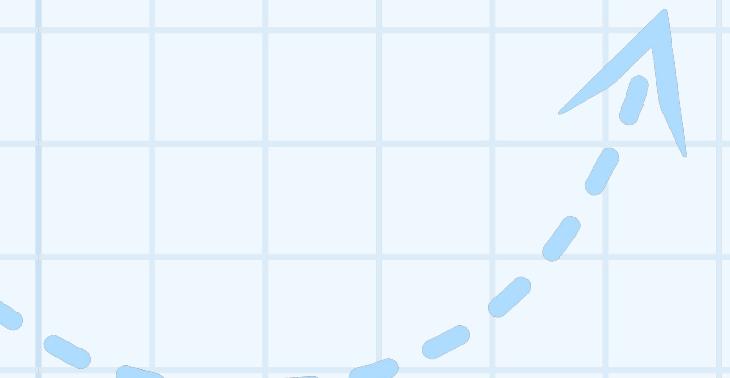
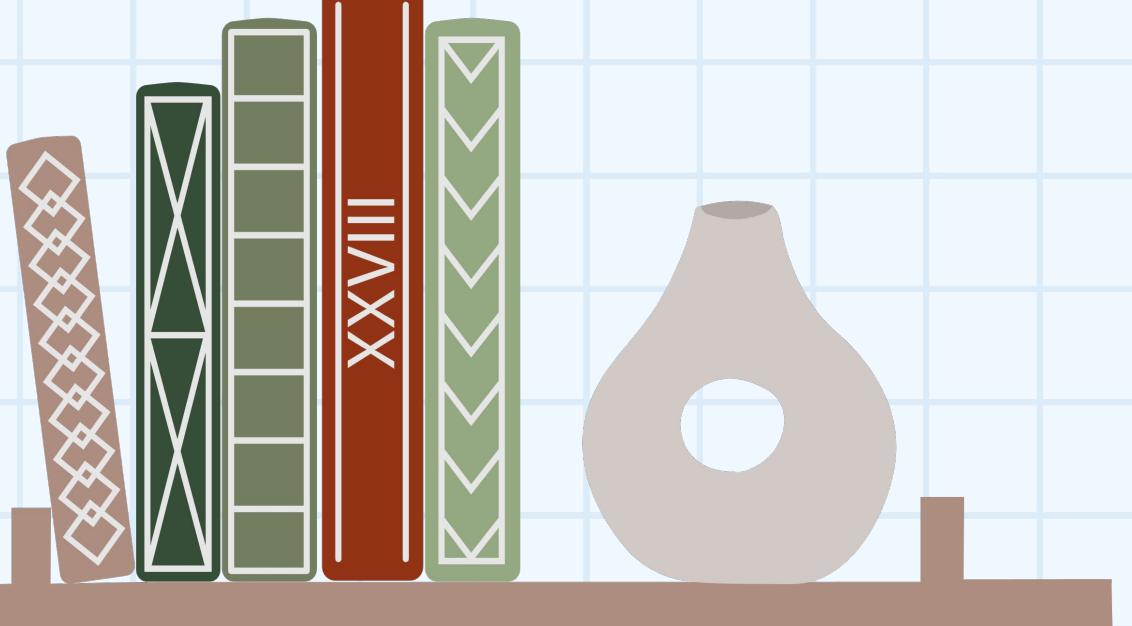
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BS./BSC.IN

Applied ai and Data Science

Basics of Data Analytics





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Let's dive into and learn:



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Joins and Unions



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Types of Joins

- INNER JOIN
- LEFT JOIN
- RIGHT JOIN
- FULL JOIN
- UNION



Types of Joins

- INNER JOIN
 - An inner join between two tables will return only records where a joining field, such as a key, finds a match in both tables.



Types of Joins

- INNER JOIN

LEFT TABLE

Transaction ID	Purchase Date
53666	01-02-2025
54333	12-01-2025
56234	05-01-2025
51852	17-03-2025
54763	25-01-2025
50651	22-03-2025

RIGHT TABLE

Transaction ID	Payment Mode
53666	UPI
56473	UPI
56234	Cash
52876	Cash
59236	Credit Card
51852	Cash

RESULTS AFTER INNER JOIN

Transaction ID	Purchase Date	Payment Mode
53666	01-02-2025	UPI
56234	05-01-2025	Cash
51852	17-03-2025	Cash



Types of Joins

- LEFTJOIN
 - A left join keeps all of the original records in the left table and returns missing values for any columns from the right table where the joining field did not find a match.



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Types of Joins

- LEFTJOIN

LEFT TABLE

Transaction ID	Purchase Date
53666	01-02-2025
54333	12-01-2025
56234	05-01-2025
51852	17-03-2025
54763	25-01-2025
50651	22-03-2025

RIGHT TABLE

Transaction ID	Payment Mode
53666	UPI
56473	UPI
56234	Cash
52876	Cash
59236	Credit Card
51852	Cash

RESULTS FROM LEFT JOIN

Transaction ID	Purchase Date	Payment Mode
53666	01-02-2025	UPI
54333	12-01-2025	NULL
56234	05-01-2025	Cash
51852	17-03-2025	Cash
54763	25-01-2025	NULL
50651	22-03-2025	NULL



Types of Joins

- **RIGHT JOIN**
 - A right join keeps all of the original records in the right table and returns missing values for any columns from the left table where the joining field did not find a match.
 - Right joins are far less common than left joins, because right joins can always be rewritten as left joins.



Types of Joins

- **RIGHT JOIN**

LEFT TABLE

Transaction ID	Purchase Date
53666	01-02-2025
54333	12-01-2025
56234	05-01-2025
51852	17-03-2025
54763	25-01-2025
50651	22-03-2025

RIGHT TABLE

Transaction ID	Payment Mode
53666	UPI
56473	UPI
56234	Cash
52876	Cash
59236	Credit Card
51852	Cash

RESULTS AFTER RIGHT JOIN

Transaction ID	Purchase Date	Payment Mode
53666	01-02-2025	UPI
56473	NULL	UPI
56234	05-01-2025	Cash
52876	NULL	Cash
59236	NULL	Credit Card
51852	17-03-2025	Cash



Types of Joins

- **FULL JOIN**
 - A full join combines a left join and right join. A full join will return all records from a table, irrespective of whether there is a match on the joining field in the other table, returning null values accordingly.



Types of Joins

- FULL JOIN

LEFT TABLE

Transaction ID	Purchase Date
53666	01-02-2025
54333	12-01-2025
56234	05-01-2025
51852	17-03-2025
54763	25-01-2025
50651	22-03-2025

RIGHT TABLE

Transaction ID	Payment Mode
53666	UPI
56473	UPI
56234	Cash
52876	Cash
59236	Credit Card
51852	Cash

RESULT AFTER FULL JOIN

Transaction ID	Purchase Date	Payment Mode
53666	01-02-2025	UPI
54333	12-01-2025	NULL
56234	05-01-2025	Cash
51852	17-03-2025	Cash
54763	25-01-2025	NULL
50651	22-03-2025	NULL
56473	NULL	UPI
52876	NULL	Cash
52876	NULL	Credit Card



Types of Joins

- UNION
 - The operator is used to vertically combine the results of two statements. For to work without errors, all statements must have the same number of columns and corresponding columns must have the same data type. does not return duplicates.



Types of Joins

- UNION

LEFT TABLE

Transaction ID	Purchase Date	Payment Mode
53666	01-02-2025	UPI
54333	12-01-2025	Credit Card
56473	29-01-2025	UPI
56234	05-01-2025	Cash
52876	12-02-2025	Cash

RIGHT TABLE

Transaction ID	Purchase Date	Payment Mode
59236	04-03-2025	Credit Card
51852	17-03-2025	Cash
54763	25-01-2025	Credit Card
55368	28-02-2025	UPI
50651	22-03-2025	UPI

RESULTS AFTER UNION

Transaction ID	Purchase Date	Payment Mode
53666	01-02-2025	UPI
54333	12-01-2025	Credit Card
56473	29-01-2025	UPI
56234	05-01-2025	Cash
52876	12-02-2025	Cash
59236	04-03-2025	Credit Card
51852	17-03-2025	Cash
54763	25-01-2025	Credit Card
55368	28-02-2025	UPI
50651	22-03-2025	UPI

Recap



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Joins and Unions of Dataset



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Thank you

